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*Published in:*  
Journal of Materials Chemistry

*DOI:*  
[10.1039/c0jm03137b](https://doi.org/10.1039/c0jm03137b)

**IMPORTANT NOTE:** You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

*Document Version*  
Publisher's PDF, also known as Version of record

*Publication date:*  
2011

[Link to publication in University of Groningen/UMCG research database](#)

### *Citation for published version (APA):*

Bijleveld, J. C., Karsten, B. P., Mathijssen, S. G. J., Wienk, M. M., Leeuw, D. M. D., & Janssen, R. A. J. (2011). Small band gap copolymers based on furan and diketopyrrolopyrrole for field-effect transistors and photovoltaic cells. *Journal of Materials Chemistry*, 21(5), 1600-1606. <https://doi.org/10.1039/c0jm03137b>

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## Electronic Supporting Information

### Small band gap copolymers based on furan and diketopyrrolopyrrole for field-effect transistors and photovoltaic cells

Johan C. Bijleveld,<sup>a</sup> Bram P. Karsten,<sup>a</sup> Simon G. J. Mathijssen,<sup>ab</sup> Martijn M. Wienk,<sup>a</sup>

Dago M. de Leeuw,<sup>b</sup> and René A. J. Janssen<sup>\*a</sup>

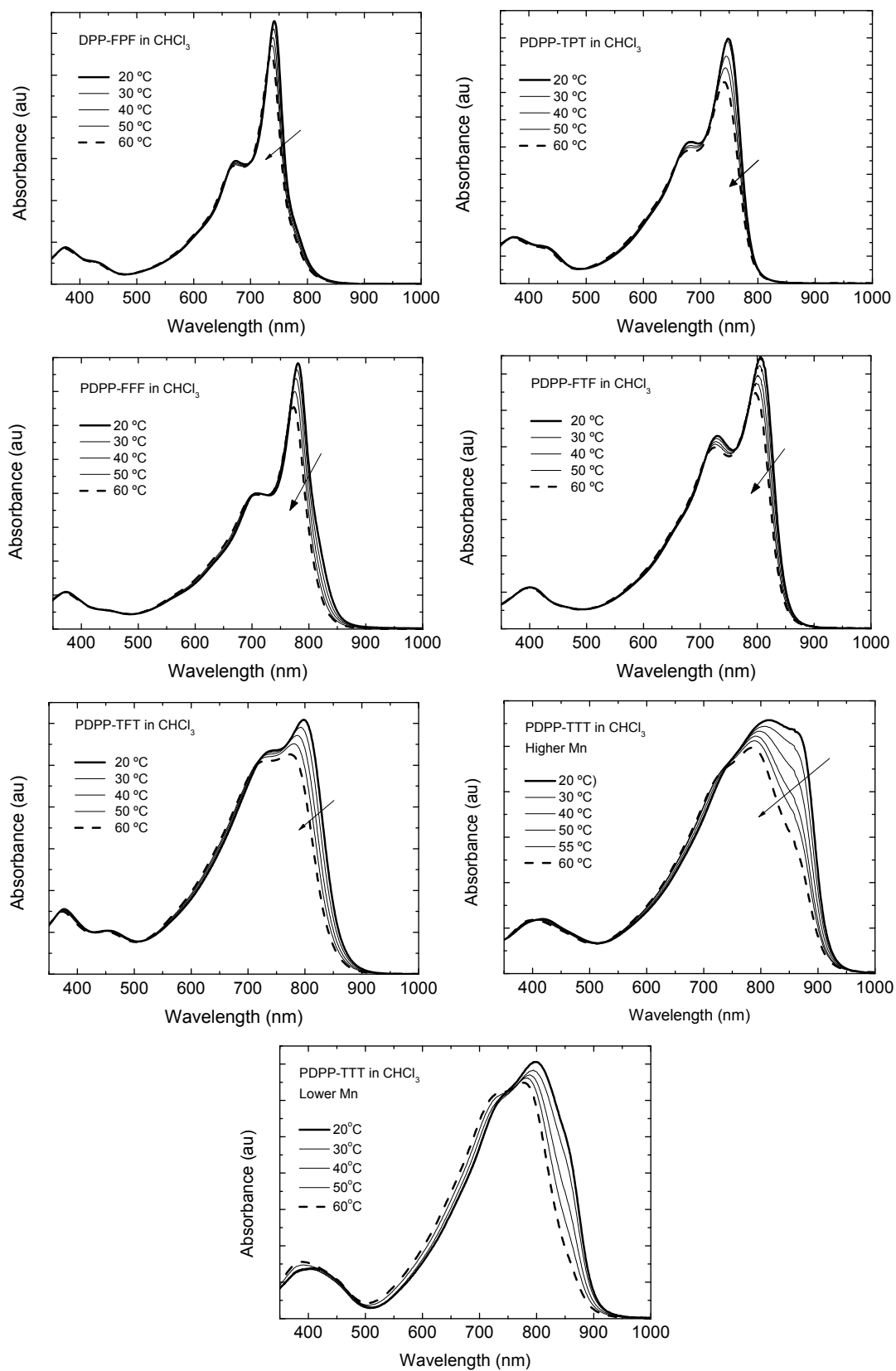
**Table S1.** Onset of UV-vis absorption of the DPP-XYX polymers in oDCB and CHCl<sub>3</sub> solution at different temperatures.

| Polymer                              | oDCB                      | CHCl <sub>3</sub>         |                           |
|--------------------------------------|---------------------------|---------------------------|---------------------------|
|                                      | 20 °C                     | 20 °C                     | 60 °C                     |
|                                      | <i>E<sub>g</sub></i> (eV) | <i>E<sub>g</sub></i> (eV) | <i>E<sub>g</sub></i> (eV) |
| <b>FPF</b>                           | 1.52                      | 1.52                      | 1.55                      |
| <b>TPT</b>                           | <i>a</i>                  | 1.56                      | 1.58                      |
| <b>FFF</b>                           | 1.43                      | 1.47                      | 1.50                      |
| <b>FTF</b>                           | 1.45                      | 1.46                      | 1.48                      |
| <b>TFT</b>                           | 1.43                      | 1.44                      | 1.47                      |
| <b>TTT</b> low <i>M<sub>n</sub></i>  | 1.39                      | 1.38                      | 1.43                      |
| <b>TTT</b> high <i>M<sub>n</sub></i> | 1.37                      | 1.35                      | 1.36                      |

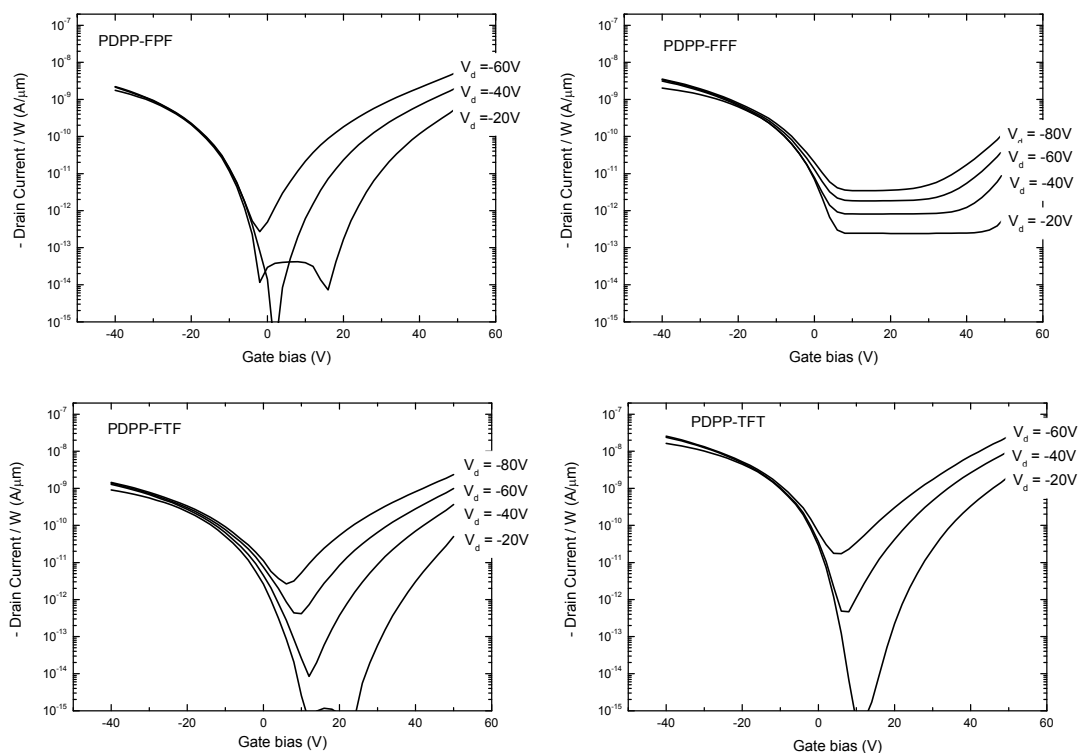
<sup>a</sup> Not soluble

<sup>a</sup> Molecular Materials and Nanosystems, Eindhoven University of Technology, PO Box 513, 5600 MB Eindhoven, The Netherlands. E-mail: r.a.j.janssen@tue.nl.

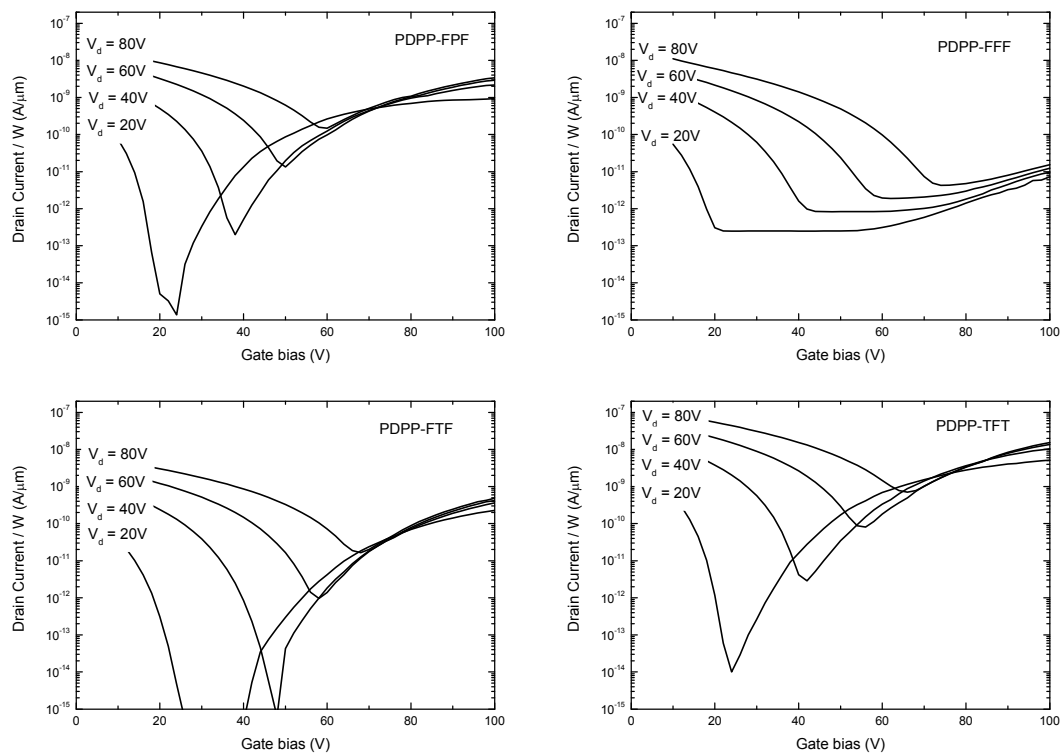
<sup>b</sup> Philips Research Laboratories, High Tech Campus 4, 5656 AE Eindhoven, The Netherlands.



**Figure S1.** Variable temperature UV-vis-nearIR absorption spectra recorded in  $\text{CHCl}_3$  solution between 20 and 60 °C for the six DPP-XYX polymers.



**Figure S2.** *p*-Type transfer curves of FETs made with the four furan based DPP-XYX polymers. Drain current is normalized with respect to the channel length for direct comparison.



**Figure S3.** *n*-Type transfer curves of FETs made with the four furan based DPP-XYX polymers. Drain current is normalized with respect to the channel length for direct comparison.